

What is Claimed is:

1. An apparatus for dispensing a plurality of fluids, the apparatus comprising:

a plurality of pumps, each pump having a connector for releasably connecting a container to the respective  
5 pump,

each container holding a fluid and comprising a connector-counterpart,

at least one actuator for releasing the containers from their respective connectors, the actuator being  
10 adapted to operatively engage the connector-counterpart and, upon engaging the counterpart, the adaptor capable of pulling the same onto the connector and establishing a fluid connection between the respective pump and the container.

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2. The apparatus of claim 1, wherein at least some of the pumps are associated with such an actuator.

3. The apparatus of claim 2, wherein the at least  
20 one actuator comprising:

a lever mounted on a pivot axis associated with a respective pump, the lever comprising an operating handle on one side of the pivot axis and at least one arm for operatively engaging the connector-counterpart on the  
25 other side of the pivot axis.

4. The apparatus of claim 3, wherein, upon establishing a fluid connection between the respective pump and the container, the handle extends substantially  
30 parallel to the pump and/or the container.

5. The apparatus of claim 3, wherein the connector-counterpart comprises at least one rail or slot and the said arm comprises at least one protrusion adapted to  
35 engage the rail or slot.

6. The apparatus of claim 1, further comprising a plurality of containers for storing a fluid and wherein each of the containers comprises a connector-counterpart for connection to a respective connector.

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7. The apparatus of claim 1, wherein the connectors are mounted on a turntable and arranged in a circle or part of a circle.

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8. An apparatus for dispensing a plurality of fluids, comprising a plurality of volumetric metering pumps, connected to a container or having a connector for releasably connecting a container to the respective pump, and

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a weighing device for measuring the weight of the fluid dispensed by the pumps.

9. The apparatus of claim 8, which further comprises a data processing device comprising:

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a memory for storing at least one parameter indicative of the required accuracy of the weight measurement to be carried out and wherein the length of the time interval during which the weight measurements are carried out is selected depending on the stored

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parameter.

10. The apparatus of claim 9, wherein the at least one parameter is indicative of the amounts that have been dispensed by each of at least some of the pumps.

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11. A method of measuring the density of a fluid by means an apparatus for dispensing a plurality of fluids, comprising a plurality of volumetric metering pumps, connected to a container or having a connector for  
5 releasably connecting a container to the respective pump, and a weighing device for measuring the weight of the fluid dispensed by the pumps, comprising:

dispensing a pre-selected amount of the fluid;  
measuring the weight of the dispensed amount; and  
10 dividing the measured weight by the dispensed volume thus yielding a value for density.

12. A method of calibrating an apparatus for dispensing a plurality of fluids, comprising a plurality  
15 of volumetric metering pumps, connected to a container or having a connector for releasably connecting a container to the respective pump, a weighing device for measuring the weight of the fluid dispensed by the pumps, a device, e.g. a data processing device comprising a memory, for  
20 storing data, the method comprising:

selecting one or more discrete volumes;  
dispensing each of the volumes one or more times  
with at least one, preferably all of the pumps;  
measuring each of the dispensed volumes and, if  
25 applicable, calculate for the discrete volumes and the pumps a mean value of the measured values; and  
storing the obtained data in the said device.

13. The method of claim 12, comprising the steps of:  
30 determining the smallest amount of fluid that is likely to be dispensed, and  
selecting at least one discrete volume smaller this smallest amount.

14. An apparatus for dispensing a plurality of fluids, the apparatus comprising:

5 a plurality of pumps, each pump connected to a container or having a connector for releasably connecting a container to the respective pump,

wherein a receptacle is positioned beneath and/or around at least some of the connectors to collect fluid leaking or dripping from a respective connector.

10 15. The apparatus of claim 14, wherein the lower wall of the receptacle or a portion of the lower wall is inclined and the lower wall comprises an opening for letting through collected fluid.

15 16. The apparatus according to claim 15, wherein the lower wall or a portion of the lower wall of the receptacle is shaped as a funnel.

20 17. The apparatus of claim 16, wherein the pumps and receptacles are mounted on or over a support, such as a turntable, and wherein the funnels extend through the support.

25 18. The apparatus of claim 17, wherein a shared receptacle is positioned beneath the said receptacles to collect fluid dripping from these receptacles.

30 19. The apparatus of claim 18, wherein the shared receptacle comprises an inclined first surface, positioned beneath a number of the said receptacles and having a raised edge along its lower rim, and at least a second surface, positioned beneath at least one end of the raised edge of the first surface.

35 20. The apparatus according to claim 19, wherein an inclined second surface provided with a raised edge is positioned beneath each of the ends of the raised edge of the first surface.

21. The apparatus according to claim 20, wherein the pumps, connectors, and receptacles are mounted on a turntable and arranged in a circle or part of a circle, a third surface is positioned beneath an end of each of the raised edges of the second surfaces, and wherein the first, second and third surfaces follow the circumference of the said turntable such that fluid dripping from any one of the receptacles will be collected by at least one of the surfaces.

22. An apparatus for dispensing a plurality of fluids, the apparatus comprising:

a support, and

a plurality of pumps, each pump connected to a container or having a connector for releasably connecting a container to the respective pump, and,

a guide for receiving and accommodating a container mounted on the support,

wherein each combination of a pump, a connector, and a container or guide is formed as a module which, as a whole, is releasably mounted on the support.

23. The apparatus according to claim 22, wherein at least some of the modules comprise a front portion and a rear portion, the front portion comprising a releasable fastener and the rear portion comprising an extension or recess, whereas the support comprises a plurality of respectively recesses and extensions for operatively engaging an extension or recess on a module.

24. The apparatus of claim 23, wherein the rear portion of the module comprises an extension extending below the module and beyond the rear portion, whereas the support comprises a plurality of slots for receiving one of the said extensions.

25. The apparatus according to claim 22, wherein at least some of the pumps comprise an actuator for releasing a container from the connector and wherein the actuator is part of the module.

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26. The apparatus according to claim 22, wherein a receptacle is positioned beneath or around at least some of the connectors to collect fluid leaking or dripping from a respective container and wherein the receptacle is  
10 part of the module.

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27. The apparatus of claim 22, wherein the modules are mounted on a turntable and arranged in a circle or part of a circle.

28. An apparatus for dispensing a plurality of fluids, comprising a turntable and a plurality of pumps, each connected to a container or having a connector for releasably connecting a container to the respective pump,  
20 the pumps and containers or connectors being mounted on the turntable arranged along the circumference of the turntable or part of the circumference of the turntable, wherein at least one of the containers has a larger volume than the other containers or is in fluid  
25 connection with a further container positioned towards or at the centre of the turntable.

29. The apparatus of claim 28, wherein the containers comprise a front portion and a rear portion,  
30 the front portions being positioned at or near the circumference of the turntable, and wherein the rear portion of the at least one larger container extends beyond the rear portions of at least some of the other containers.

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30. The apparatus of claim 29, wherein the rear portion of the at least one larger container comprises two sidewalls tapering towards the centre of the turntable.

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31. The apparatus of claim 29, comprising one or more larger containers, wherein the rear portions of the containers are complementary in shape with respect to each other and/or with respect to the rear portions of the other containers.

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32. The apparatus of claim 30, wherein the rear portions of the larger containers take up substantially all of the space defined by the rear portions of the other containers.

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33. The apparatus of claim 28, comprising two or more larger containers, which are substantially evenly distributed, either individually or group wise, over the circumference of the turntable.

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34. The apparatus of claim 28, comprising two or more larger containers containing a developer, such as peroxide, at different concentrations.

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35. The apparatus of claim 34, wherein the concentrations of the developer are in a range from 0 to 20 percent.

36. The apparatus of claim 28, wherein the at least one larger container comprises a front portion and a rear portion and wherein a filler opening is provided in at least the front portion.

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37. A container for use in the apparatus of claim 1, which comprises a connector-counterpart provided at least one rail or slot.

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38. A container for use in the apparatus of claim 1, wherein the container is a bag-in-box container and at least part of the outer surface of the container is made of paper or cardboard.

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39. A container for use in the apparatus of claim 8, wherein the container is a bag-in-box container and at least part of the outer surface of the container is made of paper or cardboard.

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40. A container for use in the apparatus of claim 14, wherein the container is a bag-in-box container and at least part of the outer surface of the container is made of paper or cardboard.

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41. A container for use in the apparatus of claim 22, wherein the container is a bag-in-box container and at least part of the outer surface of the container is made of paper or cardboard.

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42. A container for use in the apparatus of claim 28, wherein the container is a bag-in-box container and at least part of the outer surface of the container is made of paper or cardboard.

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43. A container for use in the apparatus of claim 1, wherein the container is a bag-in-box container, a connector-counterpart is fixed to the bag, the box comprises an opening for accommodating the connector-counterpart, the connector-counterpart comprises a rim comprising a groove or at least one recess, and wherein the rim of the opening in the box is positioned in the said groove or at least one recess.

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44. A container for use in the apparatus of claim 8, wherein the container is a bag-in-box container, a connector-counterpart is fixed to the bag, the box comprises an opening for accommodating the connector-counterpart, the connector-counterpart comprises a rim comprising a groove or at least one recess, and wherein the rim of the opening in the box is positioned in the said groove or at least one recess.

45. A container for use in the apparatus of claim 14, wherein the container is a bag-in-box container, a connector-counterpart is fixed to the bag, the box comprises an opening for accommodating the connector-counterpart, the connector-counterpart comprises a rim comprising a groove or at least one recess, and wherein the rim of the opening in the box is positioned in the said groove or at least one recess.

46. A container for use in the apparatus of claim 22, wherein the container is a bag-in-box container, a connector-counterpart is fixed to the bag, the box comprises an opening for accommodating the connector-counterpart, the connector-counterpart comprises a rim comprising a groove or at least one recess, and wherein the rim of the opening in the box is positioned in the said groove or at least one recess.

47. A container for use in the apparatus of claim 28, wherein the container is a bag-in-box container, a connector-counterpart is fixed to the bag, the box comprises an opening for accommodating the connector-counterpart, the connector-counterpart comprises a rim comprising a groove or at least one recess, and wherein the rim of the opening in the box is positioned in the said groove or at least one recess.